

**2008 NIOSH Direct-Reading Exposure
Assessment Methods (DREAM) Workshop**

November 13-14, 2008 @ Hilton Crystal City, Washington D.C.



Session 6

Surface Sampling/ Biomonitoring

Current NIOSH Efforts

Lead Wipes for
surface sampling,
NMAM 9105

Licensed to SKC inc
as “Full Disclosure”



Current NIOSH Efforts

- Methamphetamine surface wipe methods, NMAM Draft 9106,9109,9111 by MassSpec with isotopic dilution.
- 2 Direct Reading Methods, Colorimetric and Immunochemical. Licensed to SKC as “MethAlert”
“MethChek”



Current NIOSH Efforts

Antineoplastic drugs on surface wipes Immunochemical detection



Current NIOSH Efforts

Developing New Applications for Common Platforms

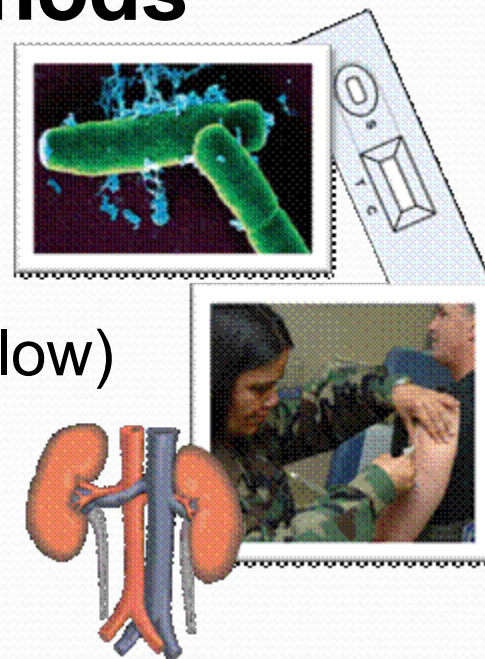
The collage features several key elements:

- Central Figure:** A person in a full-body orange hazmat suit and a white hat, holding a handheld electronic device.
- Chemical Structures:**
 - Cyclodextrin:** A cyclic oligomer of glucose units.
 - LATEX MICROSPHERE:** A central brown sphere with various functional groups attached.
 - Other structures:** Various organic and inorganic molecules, including a complex polymer-like structure at the top left and a large complex at the bottom right.
- Laboratory Equipment:**
 - Top Right:** Three test tubes containing yellow liquid.
 - Middle Right:** A pipette dispensing red liquid into a small container.
 - Bottom Right:** A balance scale with a small container on it.
 - Bottom Center:** A small electronic device with a screen.
- Logos:**
 - CDC:** U.S. Centers for Disease Control and Prevention.
 - NIOSH:** National Institute for Occupational Safety and Health.
 - DREAM WORKSHOP:** A logo featuring a silhouette of a person working.

Current NIOSH Efforts

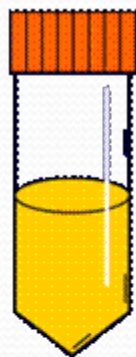
Development of new methods

- Anthrax vaccine status (lateral flow)
- β 2-microglobulin in urine (lateral/vertical flow)
- Toxicity/Allergy (lateral/vertical flow)
- Cooperation with other federal /university/industry partners to evaluate new technologies



Current NIOSH Efforts

Application of commercial/clinical methods



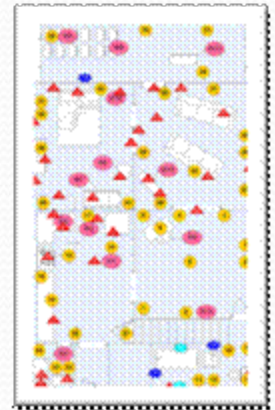
- Smoking status (lateral/vertical flow)
- CO monitors (exhaled breath /carboxyhemoglobin)
- Modification of test kits (pesticides)
- Point of Care (POC) diagnostics



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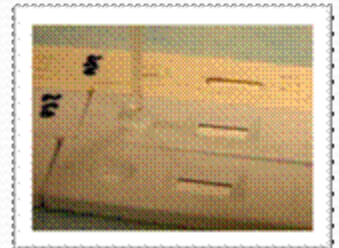
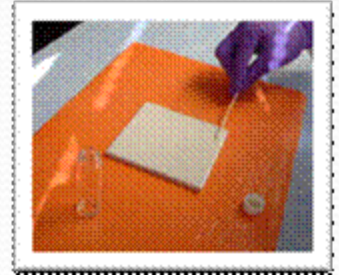
NIOSH DRM/DRI Uses

- Health Hazard Evaluations
 - Environmental Sampling, Biological Monitoring
- Exposure Assessment Studies
 - Environmental Sampling, Biological Monitoring
- Evaluation of Work Practices and Controls
 - Environmental Sampling, Biological monitoring



Challenges

- Limited REL/PEL for surface contaminants
- Limited Biological Reference Values (BRV)
- When is a qualitative measure good enough?
- What do quantitative numbers mean?
- How 'Direct' is direct reading? 1, 2, 3 steps



Workshop Aims



- What is the role for NIOSH in addressing DRI/DRM issues?
- Should NIOSH take the lead on a special DRI/DRM initiative?
- Identification of stakeholders/users: level of involvement.



Workshop Aims

- Types of DRI/DRM
- Current applications for DRI/DRM
- Obstacles to use of DRI/DRM
- Future applications/New Technologies
- Advantages/Disadvantages of particular instrumentation/methods



Workshop Aims



- Guidelines development: common criteria needed for multiple agencies.
- Specific NIOSH **N**ational **O**ccupational **R**esearch **A**genda (NORA) sector needs
- <http://www.cdc.gov/niosh/nora>

